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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,468	12/14/2001	Ralph M. Kling	42390P12912	1717

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EXAMINER

BELL, PAUL A

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/022,468

Applicant(s)

KLING, RALPH M.

Examiner

PAUL A BELL

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The original specification and claims with regard to new amendments to claim 1 do not teach that LCOS stands for "liquid crystal on silicon" it instead teaches "liquid crystal on semiconductor".

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-11 and 14 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claims 1 and 14 you define LCOS to be two different things the specification and original claims support 14 this makes LCOS unclear and indefinite.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 8, 9, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Busch (5,510,806) in view of Liao et al. (6,681,005).

With regards to claim 1 Busch teaches an apparatus comprising: a computing subsystem to process data and execute program instructions (figure 1, "portable computer"); and an optical subsystem coupled to said computing subsystem comprising a micro projection device (figure 1, item 42 "LCD projection structure" which is smaller than normal and therefore reads on "micro"), said optical subsystem integrated into said apparatus to project an image for said computing subsystem onto a viewing surface (figure 1, item 40a).

Busch does not illustrate the detail "said micro projection device including a liquid crystal on silicon (LCOS) device", he only states his small projection device a liquid crystal device. The selection of a specific type of LC would depend on what is well-known to use in this field and therefore made obvious.

Liao et al. teaches a micro projection device including a liquid crystal on silicon (LCOS) device (column 2, lines 16-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use LCOS as taught by

Liao et al. as the LC material of Busch because Liao et al. gives motivation for doing so in column 1, lines 37-40.

With regard to claim 2 the combination of Busch/Liao et al. teaches the apparatus of claim 1 further wherein said computing subsystem and said optical subsystem are housed together in a base unit (SEE Busch figure 1).

With regard to claim 3 combination of Busch/Liao et al. teaches the apparatus of claim 2 wherein said viewing surface comprises a portable, passive screen having a white area to display said image (SEE Busch figure 1, items 30 and 32 it is obvious that a screen is white so as to work properly and not distort color).

With regard to claim 8 the combination of Busch/Liao et al. teaches the apparatus of claim 1 wherein said (LCOS) device is to manipulate light in response to graphical data (See Busch figure 2, item 52).

With regard to claim 9 the combination of Busch/Liao et al. teaches the apparatus of claim 8 further comprising optics to receive manipulated light from said LCOS device, said optics to form said manipulated light into said image (See Busch figure 2, items 51 and 46).

With regard to claim 18 combination of Busch/Liao et al. teaches a method comprising: executing program instructions on a

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mobile computer; generating display data based on results of said instructions (SEE Busch figure 1, item 10 "notebook computer"); propagating said display data to a micro projection system that is integrated within said mobile computer (SEE Busch figure 1, items 40a and 42); modulating light beams in response to said display data; and projecting modulated light beams through optics (SEE Busch items 52 or 58).

With regard to claim 19 combination of Busch/Liao et al. teaches the method of claim 18 further comprising displaying an image resulting from said modulated light beams onto a portable, passive display screen (SEE Busch figure 1, "IMAGE").

With regard to claim 20 combination of Busch/Liao et al. teaches the method of claim 19 further comprising storing said display data in a frame buffer within said micro projection system integrated within said mobile computer (SEE Busch figure 1 since the whole notebook computer is the micro projection system and a frame buffer is a standard well-known part of a notebook computer, as shown in figure 1, which is an essential part of computer video display cards needed to display data properly in time it would have been therefore obvious to have a frame buffer).

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7. Claims 4-6, 10-17 , and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Busch (5,510,806) / Liao et al. (6,681,005) in view of Miyashita (5,782,548).

With regard to claim 4 the combination of Busch/Liao et al. does not illustrate the apparatus of claim 3 further comprising a first wireless input device coupled to said computing subsystem via a first wireless communication link, said first wireless input device to receive user input and to send said user input to said computing subsystem via said first wireless communication link.

Miyashita teaches a first wireless input device (figure 1, item 20) coupled to "projection system" via a first wireless communication link (figure 2a, items 14a and 14b) said first wireless input device to receive user input and to send said user input to said computing subsystem via said first wireless communication link (figure 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Busch/Liao et al. invention to have a wireless control as illustrated by Miyashita because Miyashita teaches in figure 1 that one can walk about the room and control the presentation to the people as motivation.

With regard to claim 5 the combination of Busch/Liao et al./Miyashita teaches the apparatus of claim 4 wherein said first wireless input device is a keyboard (See Miyashita figure 3 many keys on a board).

With regard to claim 6 the combination of Busch/Liao et al./Miyashita teaches the apparatus of claim 5 further comprising a second wireless input device coupled to said computing subsystem via a second wireless communication link, wherein said wireless input device is a mouse (See Miyashita figure 5 item 20 "trackball means" used to do mouse functions).

With regard to claim 10 the combination of Busch/Liao et al./Miyashita teaches the apparatus of claim 6 further comprising a wireless transceiver coupled to said computing subsystem, said wireless transceiver to form said first wireless communication link between said computing subsystem and said first wireless input devices, and to form said second wireless communication link between said computing subsystem and said second wireless input device (SEE Miyashita figure 5).

With regard to claim 11 the combination of Busch/Liao et al./Miyashita teaches the apparatus of claim 10 wherein said apparatus comprises a mobile computer system (See Busch figure 1 "portable computer").

With regard to claim 12 the combination of Busch/Liao et al./Miyashita teaches a mobile computer comprising: a memory to store

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instructions, a processor coupled to said memory, said processor to execute said instructions; a graphics controller coupled to said processor, said graphics controller to receive commands from said processor and to generate display data (figure 1 these features are inherent to "portable computer"); A wireless mouse coupled to said processor, said wireless mouse to receive user input, and to send said user input to said processor via a first wireless communication link (See Miyashita figure 5 item 20 "trackball means" used to do mouse functions); a light modulator coupled to said graphics controller (figure 2, item 52), to receive said display data and to modulate light based on said display data figure 1, item 42, "LCD projection structure"); and an optic coupled to said light modulator (figure 2, items 46 and 51), said optic to receive modulated light from said light modulator, said optic to create an image on a surface (figure 1, item 40a "IMAGE").

With regard to claim 13 the combination of Busch/Liao et al./Miyashita teaches the mobile computer of claim 12 wherein said light modulator comprises a silicon based semiconductor device to reflect light through said optic (SEE Busch figure 2, item 52 Liao et al. column 2, lines 16-20).

With regard to claim 14 the combination of Busch/Liao et al./Miyashita teaches the mobile computer of claim 13 wherein said silicon

based semiconductor device comprises a liquid crystal on semiconductor (LCOS) device (SEE Busch figure 2, item 52 and Liao et al. column 2, lines 16-20).

With regard to claim 15 the combination of Busch/Liao et al./Miyashita teaches the mobile computer of claim 14 wherein said mobile computer lacks a liquid crystal display (LCD) screen (SEE Busch figure 1, column 3, lines 26-35).

With regard to claim 16 the combination of Busch/Liao et al./Miyashita teaches the mobile computer of claim 15 wherein said surface comprises a passive display screen to display said image (SEE Busch figure 1, column 3, lines 26-35).

With regard to claim 17 the combination of Busch/Liao et al./Miyashita was show already above to cover most of these limitations in claim 17 in addition a second wireless link (SEE Miyashita figure 2A front item 14A and figure 2B item 14b).

With regard to claim 21 the combination of Busch/Liao et al./Miyashita already shown above to read on all limitations of claim 21.

8. Claims 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Busch (5,510,806) / Liao et al. (6,681,005)/Miyashita (5,782,548) in further view of Daniel (6,575,647).

With regard to claim 7 the combination of Busch / Liao et al. /Miyashita does not teach the apparatus of claim 6 wherein said keyboard is a full size, foldable keyboard.

Daniel teaches a remote keyboard that is a full size, foldable keyboard (abstract, figures 3A and 3B).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Daniel keyboard instead because Daniel gives motivation in column 1, lines 35-45.

Response to Arguments

9. Applicant's arguments with respect to claims 1, 12, and 18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Bell whose telephone number is (703) 306-3019.

If attempts to reach the examiner by telephone are unsuccessful the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377 can help with any inquiry of a general nature or relating to the status of this application.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or Faxed to: (703) 872-9306

Or Hand-delivered to: Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor
(Receptionist)

Paul Bell

Paul Bell
Art unit 2675
April 1, 2004

Chanh Nguyen
CHANH NGUYEN
PROPERTY EXAMINER